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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,336	12/10/1999	RICHARD F. GRAVEMAN	APP-1146-US	8736

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EXAMINER

DARROW, JUSTIN T

ART UNIT	PAPER NUMBER
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2132

DATE MAILED: 04/27/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/458,336

Applicant(s)

GRAVEMAN, RICHARD F.

Examiner

Justin T. Darrow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 and 59-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-20, 22-37 and 39-58 is/are rejected.
- 7) ☒ Claim(s) 21 and 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. Claims 1-65 have been presented for examination. Claims 1-65 have been restricted into Group I, claims 1-16 and 59-65, and Group II, claims 17-58, in an Office action mailed 12/03/2003. Group II, claims 17-58, has been elected without traverse and Group I, claims 1-16 and 59-65, has been withdrawn from consideration in an election filed 03/04/2004. Claims 17-58 have been examined.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 1-16 and 59-65, drawn to an approximate message authentication code, a method performed by a cryptography device, and a method for determining an acceptable number of bit differences between a first and second approximate message authentication code, classified in class 714, subclass 758.
 - II. Claims 17-58, drawn to a method performed by a cryptography device and a device for generating an approximate message authentication code, classified in class 713, subclass 168.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions Group II and Group I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination

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as claimed because Group II does not recite all the groups of rows do not have the same number of rows. The subcombination has separate utility such as user authentication.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

6. A telephone call was made 12/01/2003 to request an oral election to the above restriction requirement, but did not result in an election being made.

7. Applicant's election without traverse of Group II in Paper No. 4, filed 03/02/2004, is acknowledged.

8. Applicant's suggestion of including claims 60-65 in Group II in Paper No. 4, filed 03/02/2004 is acknowledged. The reasoning for this suggestion is on the grounds that the methods in both Group I and Group II are performed on a cryptographic device. This is not found persuasive because the inventions Group I and Group II in combination and subcombination relationship are distinct because (1) the combination as claimed in Group I does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination of Group II has utility by itself or in other combinations (MPEP § 806.05(c)). The requirement is still deemed proper and is therefore made FINAL.

Drawings

9. New formal drawings are required in this application because the drawings filed 12/10/1999 are informal. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

10. Claim 17 is objected to because of the following informality: in page 23, line 11, after "majority", insert --bit--. Appropriate correction is required.

11. Claim 40 is objected to because of the following informality: in page 23, line 11, after "majority", insert --bit--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 40-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 recites the limitation "the randomized data" in page 25, line 29. There is insufficient antecedent basis for this limitation in the claim. This rejection can be overcome by deleting "randomized in claim 40, page 25, line 29, and replacing with --permuted--.

Claim Rejections - 35 USC § 101

14. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

15. Claims 17-20, 22-37, 39-43, and 45-58 are rejected under 35 U.S.C. 101 because the disclosed invention is wholly inoperative for certain messages containing data and therefore lacks utility. "An inoperative invention, of course, does not satisfy the requirement of 35 U.S.C. 101 that an invention be useful." *In re Harwood*, 390 F. 2 985, 989, 156 USPQ 673, 676 (C.C.P.A. 1968). See MPEP § 2107.01 II. In *Harwood*, the claims drawn to a process for rendering insects sterile was claimed to administer a particular chemical to insects to eliminate symbionts. See *Harwood*, 156 USPQ at 675. Although the specification of certain species of insects that could not reproduce after becoming symbiont-free from the claimed process, the examiner cited evidence of other species of insects that were not sterile after removal of symbionts. See *id.* Because the claims included all insects, and there was evidence of certain insects where the claimed invention was inoperable, the Court of Customs and Patent Appeals affirmed the rejection "for lack of proof of utility" under 35 U.S.C. 101. See *id.* at 676.

In the instant application, the limitations recited in independent claims 17 and 40:

determining the majority bit value for each of the |A| columns for each of the T S-arrays [with T rows]; and

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determining the majority bit value for each of the $|A|$ columns in the T array [having T rows],

represent steps that are inoperable for certain messages containing data.

Pires, U.S. Patent No. 6,269,164 B1, describes a message containing data arranged in a table and randomized (see column 14, lines 23-25; figure 12, Mask 41). Like the table in claims 17 and 40, Mask 41 has $|A|$ columns where $|A| = 4$ and T^2 rows where $T = 4$ (see figure 12, Mask 41). Because the columns designated by N and O have equal numbers of 1 and 0 bits, the majority bit value cannot be determined for these columns (see figure 12, Mask 41). Because there exists certain messages containing data within the scope claimed in independent claims 17 and 40 where the majority bit value cannot be determined, the claimed invention is wholly inoperative for these messages.

This rejection can be overcome by “limit[ing] the claims to the area where operativeness has not been challenged by appropriate and convincing evidence.” *Id.* In the instant application, this rejection can be overcome by incorporating the subject matter of dependent claims 21 or 38; and 44 or into independent claims 17 and 40, respectively. Alternatively, this rejection can be overcome by “submitting representative evidence refuting the apparent suggestion of inoperativeness of the invention as broadly claimed arising from the reference cited by the examiner.” *Id.*

Allowable Subject Matter

16. Claims 21 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim.

17. Claim 43 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

18. The following is a statement of reasons for the indication of allowable subject matter:

Claims 21 and 38; and 43 are drawn to a method and device for generating an approximate message authentication code, respectively. The closest prior art, Pires, U.S. Patent No. 6,269,164 B1, discloses a similar method and device. Pires illustrates:

receiving a message containing data and arranging the data into a table having $|A|$ columns and T^2 rows, where A and T are integers (see column 13, lines 49-52; figure 15, item 45; receiving sixty-four binary bits of plain text); and

permuting, masking, and copying at least some of the arranged data into T S-arrays, each S-array having $|A|$ columns (see column 14, lines 23-27; figure 12, items 34, 40, and 41; using the Bank by Bank rankings to generate the Mask based on a formula; see column 11, lines 43-46; figures 1, 3, and 4).

However, Pires neither teaches nor suggests determining a majority bit value of each of the $|A|$ columns for each of the T S-arrays, with an odd number of rows. This particular feature incorporated in dependent claims 21 and 38; and 43 render them to have allowable subject matter.

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Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Discovision Associates (Jones et al.), European Patent Application Publication No. EP 0 674 266 A2, discloses representing data in a unique table for accessing.
- Jiawook et al., U.S. Patent No. 6,125,183 A, discloses encryption by manipulating tabulated data

Telephone Inquiry Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin T. Darrow whose telephone number is (703) 305-3872 and whose electronic mail address is justin.darrow@uspto.gov. The examiner can normally be reached Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barrón, Jr., can be reached at (703) 305-1830.

The fax number for Formal or Official faxes to Technology Center 2100 is (703) 872-9306. In order for a formal paper transmitted by fax to be entered into the application file, the paper and/or fax cover sheet must be signed by a representative for the applicant. Faxed formal papers for application file entry, such as amendments adding claims, extensions of time, and statutory disclaimers for which fees must be charged before entry, must be transmitted with an authorization to charge a deposit account to cover such fees. It is also recommended that the cover sheet for the fax of a formal paper have printed "**OFFICIAL FAX**". Formal papers

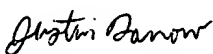
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transmitted by fax usually require three business days for entry into the application file and consideration by the examiner. Formal or Official faxes including amendments after final rejection (37 CFR 1.116) should be submitted to (703) 872-9306 for expedited entry into the application file. It is further recommended that the cover sheet for the fax containing an amendment after final rejection have printed not only **"OFFICIAL FAX"** but also **"AMENDMENT AFTER FINAL"**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

April 22, 2004


JUSTIN T. DARROW
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100